

GRAVINA ACCESS PROJECT

APPENDIX A

OPTION :  7/25/00 14:13	NB	A	B	C1	C2	C3	C4	D1	D2	E	E2	F1	F1 (CABLE)	F2	F3	G1	G2	G3	G4
	NO BUILD	HIGH LEVEL BRIDGE - REFUGE COVE	HIGH LEVEL BRIDGE - PENNINSULA POINT	HIGH LEVEL BRIDGE - AIRPORT AREA NORTH	HIGH LEVEL BRIDGE - AIRPORT AREA SOUTH	MODIFIED HIGH LEVEL BRIDGE - AIRPORT / SIGNAL ROAD	MODIFIED HIGH LEVEL BRIDGE - AIRPORT / CAMBRIA DRIVE AREA	LOW LEVEL BRIDGE - AIRPORT AREA	LOW LEVEL MOVEABLE BRIDGE - AIRPORT AREA	TUNNEL - JEFFERSON STREET	TUNNEL - AIRPORT AREA	LOW LEVEL (WEST) / HIGH LEVEL (EAST) - PENNOCK ISLAND	HIGH LEVEL - CABLE STAYED BRIDGE AT EAST CHANNEL	TUNNEL - EAST CHANNEL	LOW LEVEL (EAST) / HIGH LEVEL (WEST) - PENNOCK ISLAND	FERRY - REFUGE COVE	FERRY - PENNINSULA POINT	FERRY - DOWNTOWN	FERRY - EXPAND EXISTING
Begin Construction - Y = <a href="#">2003</a> Life Span (years) - n = <a href="#">75</a> Years to Construct - yc = <a href="#">3</a> Eff. Real Discount Rate/Yr - i = <a href="#">4.2%</a> Roadway Repaving* (\$/m) = \$188 Repaving* (\$/m2) = \$13	<a href="#">2 Ferries</a> <a href="#">1 Route</a>															<a href="#">4 Ferries</a> <a href="#">2 Routes</a>	<a href="#">4 Ferries</a> <a href="#">2 Routes</a>	<a href="#">4 Ferries</a> <a href="#">2 Routes</a>	<a href="#">4 Ferries</a> <a href="#">2 Routes</a>
CASH FLOW (Constant 2003 Dollars):																			
LIABILITIES:																			
Initial Cost of Constr. & Project Development: Year 2003 to Year 2005 (Beginning of Year)	<a href="#">0</a>	\$268,820,000	\$384,862,000	\$241,980,000	\$205,259,000	\$145,792,000	\$152,531,000	\$89,210,000	\$248,656,000	\$262,583,000	\$350,249,000	\$205,791,000	\$210,867,000	\$553,188,000	\$181,604,000	\$71,477,000	\$66,166,000	\$47,133,000	\$42,682,000
Annual Operating & Maintenance Costs: Year 2006 to 2080 (End of Year)	\$1,070,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$80,000	\$350,000	\$2,789,000	\$2,885,000	\$120,000	\$210,000	\$2,981,000	\$120,000	\$3,336,000	\$3,336,000	\$3,336,000	\$3,336,000
Periodic Maintenance Costs:																			
Repaving: Frequency (Years): Length Project (m): Parking Lot (m2):	\$40,560 <a href="#">20</a> 0 <a href="#">3120</a>	\$1,587,284 20 8443 <a href="#">0</a>	\$1,324,648 20 7046 <a href="#">0</a>	\$989,256 20 5262 <a href="#">0</a>	\$1,055,996 20 5617 <a href="#">0</a>	\$1,100,552 20 5854 <a href="#">0</a>	\$1,011,816 20 5382 <a href="#">0</a>	\$785,652 20 4179 <a href="#">0</a>	\$785,652 20 4179 <a href="#">0</a>	\$903,528 20 4806 <a href="#">0</a>	\$928,532 20 4939 <a href="#">0</a>	\$1,876,052 20 9979 <a href="#">0</a>	\$1,876,052 20 9979 <a href="#">0</a>	\$1,819,088 20 9676 <a href="#">0</a>	\$1,725,464 20 9178 <a href="#">0</a>	\$1,363,280 20 6820 <a href="#">6240</a>	\$969,796 20 4727 <a href="#">6240</a>	\$619,364 20 2863 <a href="#">6240</a>	\$586,840 20 2690 <a href="#">6240</a>
Mechanical/Electrical Equipment Replacement: Frequency (Years):	<a href="#">\$5,244,000</a> <a href="#">25</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$2,000,000</a> <a href="#">40</a>	<a href="#">\$3,845,000</a> <a href="#">20</a>	<a href="#">\$3,845,000</a> <a href="#">20</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$3,845,000</a> <a href="#">20</a>	<a href="#">\$0</a> <a href="#">1</a>	<a href="#">\$10,488,000</a> <a href="#">25</a>	<a href="#">\$10,488,000</a> <a href="#">25</a>	<a href="#">\$10,488,000</a> <a href="#">25</a>	<a href="#">\$10,488,000</a> <a href="#">25</a>
Terminal Maintenance: Frequency (Years):	<a href="#">\$3,495,000</a> <a href="#">10</a>	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$6,990,000</a> 10	<a href="#">\$6,990,000</a> 10	<a href="#">\$6,990,000</a> 10	<a href="#">\$6,990,000</a> 10
Existing Ferry Replacement: Year Ferry 2 Replaced:	<a href="#">\$3,825,000</a> <a href="#">10</a>	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$0</a> 10	<a href="#">\$3,825,000</a> 10	<a href="#">\$3,825,000</a> 10	<a href="#">\$3,825,000</a> 10	<a href="#">\$3,825,000</a> 10
Ferry Replacement(1): Frequency (Years):	\$3,825,000 <a href="#">50</a>	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$3,825,000 50	\$3,825,000 50	\$3,825,000 50	\$3,825,000 50
EQUITY: Salvage Value**:																			
Bridge(s): Construction Cost: Life of Bridge(s):	\$0 <a href="#">\$0</a> <a href="#">75</a>	\$0 \$126,728,000 75	\$0 \$190,997,000 75	\$0 \$106,063,000 75	\$0 \$63,014,000 75	\$0 \$63,283,000 75	\$0 \$61,078,000 75	\$0 \$35,845,000 75	\$0 \$122,125,000 75	\$0 \$0 75	\$0 \$0 75	\$0 \$81,782,000 75	\$0 \$84,709,000 75	\$0 \$44,122,000 75	\$0 \$74,630,000 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75
Tunnel(s): Construction Cost: Life of Tunnel(s):	\$0 <a href="#">\$0</a> <a href="#">75</a>	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$131,823,000 75	\$0 \$183,020,000 75	\$0 \$0 75	\$0 \$0 75	\$0 \$235,064,000 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75	\$0 \$0 75
Repaving: Mechanical/Electrical Equipment Replacement: Terminal Maintenance:	\$10,140 \$0 \$1,747,500	\$396,821 \$0 \$0	\$331,162 \$0 \$0	\$247,314 \$0 \$0	\$263,999 \$0 \$0	\$275,138 \$0 \$0	\$252,954 \$0 \$0	\$196,413 \$0 \$0	\$196,413 \$250,000 \$0	\$225,882 \$961,250 \$0	\$232,133 \$961,250 \$0	\$469,013 \$0 \$0	\$469,013 \$0 \$0	\$454,772 \$961,250 \$0	\$431,366 \$0 \$0	\$340,820 \$0 \$3,495,000	\$242,449 \$0 \$3,495,000	\$154,841 \$0 \$3,495,000	\$146,710 \$0 \$3,495,000
Ferry 1 Replacement Salvage: Ferry 2 Replacement Salvage: Ferry 3-4 Replacement Salvage: Life of Ferry(s):	\$1,912,500 \$2,677,500 \$3,825,000 <a href="#">50</a>	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$0 \$0 \$0 50	\$1,912,500 \$2,677,500 \$3,825,000 50	\$1,912,500 \$2,677,500 \$3,825,000 50	\$1,912,500 \$2,677,500 \$3,825,000 50	\$1,912,500 \$2,677,500 \$3,825,000 50
LIFE CYCLE COST (2003 Dollars):																			
LIABILITIES:																			
Initial Cost of Constr. & Project Development:	\$0	\$258,130,226	\$369,557,752	\$232,357,533	\$197,096,763	\$139,994,501	\$146,465,521	\$85,662,516	\$238,768,058	\$252,141,243	\$336,321,157	\$197,607,608	\$202,481,758	\$531,190,176	\$174,382,417	\$68,634,678	\$63,534,873	\$45,258,730	\$40,984,727
Annual Operating & Maintenance Costs:	\$21,488,991	\$2,008,317	\$2,008,317	\$2,008,317	\$2,008,317	\$2,008,317	\$2,008,317	\$1,606,654	\$7,029,109	\$56,011,958	\$57,939,943	\$2,409,980	\$4,217,465	\$59,867,927	\$2,409,980	\$66,997,452	\$66,997,452	\$66,997,452	\$66,997,452
Periodic Maintenance Costs:	Repaving: Mechanical/Electrical Equipment Replacement: Terminal Maintenance:	\$25,697 \$2,249,648 \$5,728,888	\$1,005,621 \$0 \$0	\$839,229 \$0 \$0	\$626,742 \$0 \$0	\$669,025 \$0 \$0	\$697,253 \$0 \$0	\$641,035 \$0 \$0	\$497,749 \$0 \$0	\$572,429 \$588,270 \$572,429	\$588,270 \$2,435,994 \$0	\$1,188,570 \$2,435,994 \$0	\$1,188,570 \$0 \$0	\$1,152,481 \$2,435,994 \$0	\$1,093,165 \$0 \$0	\$863,704 \$4,499,296 \$11,457,775	\$614,413 \$4,499,296 \$11,457,775	\$392,397 \$4,499,296 \$11,457,775	\$371,792 \$4,499,296 \$11,457,775
Ferry 1 Replacement (initial replacment not included): Ferry 2 Replacement: Ferry 3-4 Replacement:	\$432,158 \$2,526,927 \$864,316	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$432,158 \$2,526,927 \$864,316	\$432,158 \$2,526,927 \$864,316	\$432,158 \$2,526,927 \$864,316	\$432,158 \$2,526,927 \$864,316
EQUITY: Salvage Value**:																			
Bridge(s): Tunnel(s): Repaving: Mechanical/Electrical Equipment Replacement: Terminal Maintenance: Ferry 1 Replacement Salvage: Ferry 2 Replacement Salvage: Ferry 3-4 Replacement Salvage:	\$0 \$0 \$410 \$0 \$70,589 \$77,254 \$108,155 \$154,507	\$0 \$0 \$16,029 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$13,377 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$9,990 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$10,664 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$11,114 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$10,218 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$7,934 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$7,934 \$0 \$0 \$0 \$0 \$0	\$0 \$0 \$9,124 \$38,829 \$0 \$0 \$0 \$0	\$0 \$0 \$9,377 \$38,829 \$0 \$0 \$0 \$0	\$0 \$0 \$18,945 \$0 \$0 \$0 \$0	\$0 \$0 \$18,945 \$0 \$0 \$0 \$0	\$0 \$0 \$18,370 \$38,829 \$0 \$0 \$0 \$0	\$0 \$0 \$17,425 \$0 \$0 \$0 \$0	\$0 \$0 \$13,767 \$0 \$141,177 \$77,254 \$108,155 \$154,507	\$0 \$0 \$9,794 \$0 \$141,177 \$77,254 \$108,155 \$154,507	\$0 \$0 \$6,255 \$0 \$141,177 \$77,254 \$108,155 \$154,507	\$0 \$0 \$5,926 \$0 \$141,177 \$77,254 \$108,155 \$154,507
TOTAL LIFE CYCLE COST :	<a href="#">(\$32,905,708)</a>	<a href="#">(\$261,128,135)</a>	<a href="#">(\$372,391,921)</a>	<a href="#">(\$234,982,601)</a>	<a href="#">(\$199,763,441)</a>	<a href="#">(\$142,688,957)</a>	<a href="#">(\$149,104,655)</a>	<a href="#">(\$87,758,984)</a>	<a href="#">(\$246,617,855)</a>	<a href="#">(\$311,113,671)</a>	<a href="#">(\$397,237,158)</a>	<a href="#">(\$201,187,213)</a>	<a href="#">(\$207,868,848)</a>	<a href="#">(\$594,589,379)</a>	<a href="#">(\$177,868,138)</a>	<a href="#">(\$155,781,444)</a>	<a href="#">(\$150,436,321)</a>	<a href="#">(\$131,941,702)</a>	<a href="#">(\$127,647,421)</a>